

therefore, remains to be taken before the dream of the alchemists has been realized.<sup>1</sup>

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### NOTES.

*An Electrically Heated Sealed Tube Furnace.*—A sealed tube furnace must, frequently, be allowed to run over night and, at the same time, admit of being easily moved from place to place. The danger from fire, involved when heated by the ordinary burner, as well as the impossibility of keeping a uniform temperature without a temperature regulator, in many cases, makes the use of electricity very convenient as a means of heating.

This is very readily accomplished by means of nichrome resistance wire covered with asbestos (this wire can be obtained from the Driver-Harris Wire Co., of Harrison, N. J.). With this wire it is possible to make the windings directly on the iron tubes of the furnace without danger of short circuit at the temperature customarily used in these furnaces.

The furnace in question was made by covering each of the two tubes, in an ordinary sealed tube furnace, with one layer of thin asbestos paper (an advisable precaution) and then winding with 55 feet of No. 22 B. S. asbestos covered, nichrome resistance wire. The wire was wound somewhat closer at each end than in the center of the tube, this making an even distribution of heat throughout the length of the tube. Under these conditions about 2 amperes were used when connected in parallel to a 110 volt circuit and 1 ampere when connected in series. This gave temperatures of 150° and 250° within the tubes. When the space within the box around the iron tubes was filled with asbestos fiber and magnesium oxide, temperatures of 240° and 440° were obtained. If checked occasionally a resistance box marked with the temperatures corresponding to the different steps will give a very satisfactory means of regulating the temperature.

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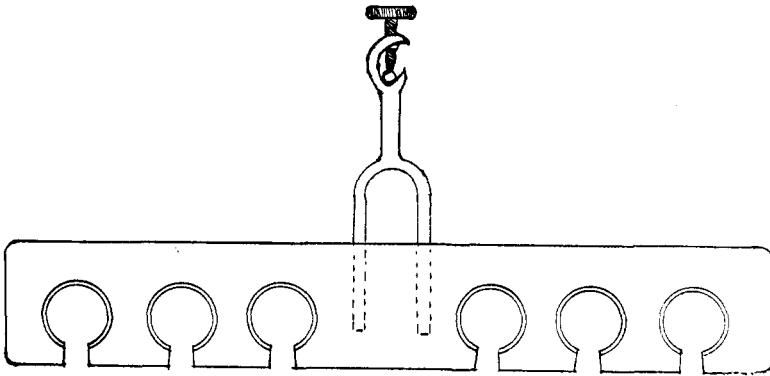
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*A Handy Buret-Holder.*—Being obliged, on an occasion three years ago, to work with a small traveling laboratory forty miles from the base of supplies, it became necessary to improvise a compact support for a

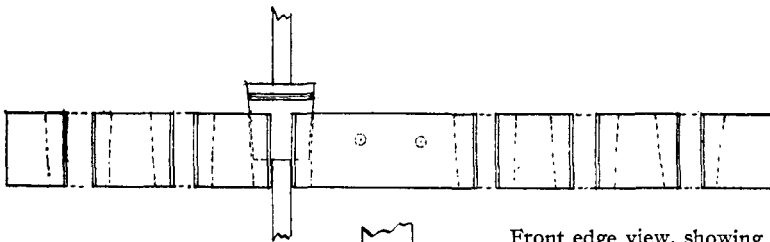
<sup>1</sup> New results have been published by Ramsay and Gray. According to these investigators, carbon dioxide may be produced by the action of radium emanation upon compounds of thorium, zirconium, silicon, etc. But inasmuch as carbon compounds may easily find their way into apparatus by accident, it is difficult to establish beyond doubt a transformation of the elements thorium or zirconium into carbon. The authors themselves admit that their experiments are not conclusive.

considerable number of burets. The resulting device was more satisfactory than the conventional article, and we now use it constantly.

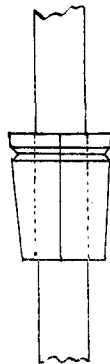
A piece of board of suitable size (*e. g.*,  $50 \times 8 \times 2.2$  cm.) is bored, a little in front of the middle, with a row of holes about 2.5 cm. in diameter and 5 cm. between centers. These holes are then connected with the front of the board by saw-cut slots about 1.7 cm. wide. All edges are rounded and sandpapered, the bored holes being filed out so as to be slightly conical with the base up. Conical corks are then selected to fit the holes so that



Top view, with burner-fork bracket.



Front edge view, showing one buret in place.



Split and grooved cork, with section of buret.

about 1.5 cm. of the upper end of the cork will project when snugly pushed down. The corks are bored with borers slightly smaller than the burets they are to carry, and then split longitudinally with a knife into two equal parts. When the two halves of the cork are placed around a buret and wedged snugly down into a hole in the board, the buret will be held securely, but at the same time may be slid up and down much more easily than if held in rubber. There are no screws to rust or strip, and the buret is much easier to insert and remove (through the slot) than in a screw clamp. The burets being held in a regular row at the most convenient intervals, a single stand will hold many more than is convenient with screw clamps.

The arrangement may be improved further by cutting a shallow groove around the cork, before splitting, about 0.5 cm. from its larger end; in this groove are placed two or three light rubber bands. This arrangement adds to the ease of operation, as the cork is held on the buret until deliberately removed, and yet permits the buret to slip up and down easily; one also does not have to be so careful in placing the cork in the slots, as when the bands are not used.

The perforated board is supported by some form of bracket; we use a metal clamp sliding on an ordinary vertical support with a heavy base. A burner fork makes a convenient bracket, it being only necessary to bore two holes horizontally into the back edge of the perforated board at the proper distance apart to receive the prongs of the fork.

The support may also be used with small funnels, and a similar device with larger holes, for larger funnels. The slot in the front makes it possible to remove the funnel from the support without loss while it is still dripping rapidly, the stem of the funnel passing out through the slot while its lower end is kept in the receiving vessel.

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## A CHEMICAL INVESTIGATION OF THE OIL OF CHENOPODIUM.

BY E. K. NELSON.

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### Introduction.

American wormseed oil, official in the United States Pharmacopoeia as *Oleum chenopodii*, is distilled from *Chenopodium ambrosioides*, var. *Anthelmintica*. It is used as a remedy for worms, particularly for *Ascarides*, which it seems to narcotize so that they can be eliminated by means of a laxative. The larger part of this oil produced in the United